PILOT ON INCUBATING MODELS OF DIGITAL TRANSACTIONS FOR MICROFINANCE LENDING

End of the Project Report

Implemented by: Microfinance Institutions Network (MFIN)

Technical Service Provider: Spice Digital Ltd.

Sponsored by: Hong Kong and Shanghai Banking Corporation Limited (India) (HSBC)
Preface & Acknowledgements

India is on the cusp of a digital revolution, mainly due to major influencers. First, the regulator is defining the landscape by innovation-led policies and maintaining security and risk management standards to highest levels. Second, the government is focused on moving towards a digital or less-cash economy. Third, the banks are embracing technology to accelerate digital payments using API banking. And last, we have fintech innovators who are re-imagining solutions for our day-to-day problems.

Microfinance has decades of success growing and strengthening a high-touch, cash-intensive business model. Cash-based loan disbursals and collection provides various limitations over cash-less (digital) payments-based processes which includes high operational cost for the MFIs, high turnaround time, chances of frauds and inability to ascertain whether the collection amount has come from the borrower or from the group. Digital has changed the way financial services are being delivered in India and MFIs are no exception. As per MFIN publications, the MFIs are increasingly adopting cashless methods for disbursements (90% for most MFIs), however only 5% of repayments are cashless.

In view of this, MFIN conducted a pilot project to understand a suitable model for loan collections using various digital payment instruments for the MFI industry, details of which are available in the report. The project focused on reviewing the adoption of multiple ways for making digital payments available in India, specifically— a) Aadhaar based payments used for financial inclusion that is built on the JAM trinity, i.e. JanDhan, Aadhaar and mobile, b) mobile and internet based payments powered by UPI, IMPS, net/mobile banking and interoperable QR codes, and c) card-based payments. The study was funded by HSBC India and aimed to assess the adoption of various digital payments among MFI borrowers in a digital-with-human-assist model.

MFIN contracted Spice Money, an assisted fintech company which offers various digital payments solution to Bharat population to design cashless models for piloting digital transactions, develop training modules for branch staff and borrowers, build mobile application and deploy them in branches, assimilate results and regular reporting to MFIN.

Six member NBFC-MFIs namely, Inditrade Microfinance, Need Livelihood Microfinance, Nightingale Finvest, Midland Microfin, Vaya Finserv and Svatantara Microfin representing various size and geography of operations executed this pilot in 19 branches. The pilot was preceded by a base line study conducted by Micro-Credit Ratings International Limited (M-CRIL) to know the initial level of understanding of MFI clients regarding the digital means of transactions and the solutions were created accordingly.
This project has been made possible only with the support and contributions of many individuals and organizations. We would like to gratefully acknowledge this support.

We express our gratitude to Mr. Swetan Sagar, Mr. Piyush Singh and Mr. Amit Mathur of MFIN for entrusting Spice Money with the task of incubating models of digital transactions for Micro finance Industry. We also acknowledge MFIN’s support throughout the course of the project including preparation of this report. In addition, the project benefited tremendously from the flexibility offered by acquiring banks namely, ICICI Bank and RBL Bank for tailoring the mobile application used in this project. All six participating MFIN member MFIs had dedicated teams working for this project on training, executing and servicing the borrowers. We would like to thank all these teams for the quality of their time and inputs which have made such a pilot possible. In particular, we would like to thank Mr. Anujeet Varadkar and Mr. Divyansh Dua of Svatantra, Mr. Amitesh Kumar & Ms Parminderjit Kaur of Midland, Mr. Arijeet Das & Yogesh of Vaya Finserv, Mr. Mrinmoy of Nightangle, Mr Anil Kumar Singh of Need, Mr Arunkumar & Mr Vignesh of Inditrade Microfinance for constantly engaging and working with their team and providing their feedback. We also thank Ms. Aloka Majumdar and Ms. Gayatri Divecha of HSBC India, for the project funding support.

In addition, we immensely benefited from inputs of Micro-Credit Ratings International Limited (M-CRIL) in the baseline study.

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1. Introduction

This report is an outcome of a comprehensive pilot project conducted with the 14,245 clients of six Microfinance Institutions (MFIs) across India, to understand and propose a suitable digital payment model for microfinance loan collections. A brief background about this study is given in the following section.

1.1 Background

There are 187 MFIs catering to over 7.68 crores of low-income customers, with an outstanding portfolio of Rs. 1,66,284 crores and repayment rate of over 99 per cent. While digitization has been implemented in backend processes, the products are still delivered in operational models which are high on human touch and there is use of cash-based repayments, disbursements have gone digital to an extent of 95%.

Digitalising cash-based operations has the potential to bring a host of benefits to MFIs as it mitigates cash carrying risks and improves operational efficiency by saving time for frontline staff. It can aid in the diversification of products offered to consumers and enable the innovation of customer centric offerings based on critical insights sourced from digital data collected over time on customer behaviour. It was in this context that MFIN, in its endeavour to bring digital payments to the last mile, conducted this pilot project to evaluate digital payments model for MFI transactions for collections.

1.2 Project Objectives

The overall goal of this project was to provide cost-effective and scalable options to six partner MFIs (three small, two medium and one large*) for collecting repayments from their clients through digital methods. [* MFI Size: Gross Loan Portfolio (GLP) of <Rs 100 Cr for small, Rs 100 to 500 Cr for medium and >Rs500 Cr for large]. The objectives of the project were:

1. Understand borrowers’ profile and behavior in relation to use and preferences for potential adoption of digital transactions
2. Design cashless models for piloting digital transactions for repayment collections
3. Module development for training of branch staff, Training of Trainers (ToT) of master trainers and client awareness camps to facilitate implementation of selected models at selected branches
4. Training delivery for branch level staff, master trainers and organizing awareness creation camps for clients to make them familiar with digital transaction processes
5. Deployment of digital transactions processes and repayment collections at selected pilot branches
6. Documentation of lessons learned during the pilot, future roadmap and scaling-up strategy, and dissemination to key stakeholders.
All the above project objectives were met in a timely manner. Four out of six partner NBFC-MFIs chose to continue with the application and processes developed under the project even after the conclusion date. This means that the models used were sustainable and application designed was robust for scale up as well with no additional update required on the application.

The video-based training modules have been put on youtube for public good so that it can be used by the partner NBFC-MFIs as well as by other institutions working in the domain. And the pamphlets were distributed to partners at their head office level to be used for client awareness activities. At the end of the project regional workshops were conducted in Kolkata, Mumbai, Delhi and Bengaluru to disseminate the lessons learned under the pilot. These workshops helped NBFCs, MFIs, NBFC-MFIs, telecom companies, regulators, FinTech companies and banks to debate and grasp the ground issues and possibilities for digitalisation in microfinance lending.

1.3 Implementation approach

The project tested three digital mode of transactions for loan repayment and entire project was executed by following an ecosystem approach than a standalone digital initiative. Client and loan officer training, collaterals, mobile based collection application designed on assisted model and customer care support ecosystem was developed in the project. The project was implemented in consultation with MFIN and deliverables were shared with MFIN as per the project logframe (annexure -1). The project was divided into three phases, starting from requirement assessment and then culminating to knowledge dissemination. A brief of phases undertaken in the project are as following:

**Phase 1: Groundwork** – onboarding of project team, identifying partners (MFI, technology, banking and channel partners), designing models to be piloted, conducting base line study and development of monitoring and reporting framework

**Phase 2: Execution of pilot** – training of partner NBFC-MFI staff and channel partners on the proposed models followed by development of mobile application with the three digital payment mode. Subsequent, roll-out of the models at pilot branches. This is accompanied with concurrent monitoring, client awareness training and support to the NBFC-MFI operations team and channel partners

**Phase 3: Knowledge management** – gathering feedback from different stakeholders followed by documentation and dissemination of knowledge generated in the project through four regional workshops.

The implementation of project has followed the log frame developed under the project (enclosed in Annexure 1) which highlights all activities and their expected outcome along with pre-defined measurable parameters to monitor and evaluate the project for each phase.
1.4 Study Limitations

Listing the limitations of the study indicates the characteristics of design or methodology that impacted or influenced the interpretation of the findings of this project. Limitations of this project are as follows:

- Operational issues like transfer of staff, compatible smartphones with OTG access and collection issues
- Non-financial transactions (like bank balance inquiry) are precursor for building trust in digital payment instruments. Since the digital products used in the pilot were merchant payments (and not P2P transactions) balance enquiry was not provided in Aadhaar Pay, mPOS and UPI as per the procedural guidelines of NPCI and acquiring banks
- An account of effectively looking at merits of various payments mode NACH/eNACH (standing instructions) were not considered as digital payments model for this project, because there is a high fee of NACH failure
- The pilot didn’t scope-in the deep integrated system with partner MFIs’ MIS for reconciliation, since it was the pilot project and partners wanted to be sure of the model before investing time and resources in integration. Additionally, all six NBFC-MFIs were at different level of back end systems and processes hence a standard integration with multiple vendors and systems was beyond the scope of the project
- Clients were suggested to use their channel of choice to convert the cash to digital mode by depositing money in their bank account. It was also preferred as the route to encourage more clients to interact with their bank branches to be more aware of financial services and inculcate banking habit. However, the impact of the project on increased banking habit was beyond the scope of the pilot.

2 Project activities

The project activities were executed as per the log frame with defined beginning and end dates and tasks were identified and executed as per agreed timeline. This report outlines the various activities of this project in the following three phases:

2.1 Phase 1 – Groundwork

The key objective of this phase was to design the broad construct of this project including listing of the activities i.e onboarding the project team, identifying partners (MFI, technology, banking and channel
partners), designing models to be piloted, conducting base line study and development of monitoring and reporting framework for completion of this project. An agenda of this phase was to get a buy-in from all the concerned stakeholders including participating MFIs. A project initiation meeting was conducted in Delhi to understand the stakeholder’s point of view to discuss the issues and possibilities. This helped in developing the understanding of the partner’s system and to identify the branches for the pilot. Activity wise explanation is as following;

2.1.1 MFI Selection

Six NBFC-MFI members were selected to participate in the pilot project. Selection was done based on the loan portfolio (GLP) size and geographical representation of all regions of India (Categorization of MFI was based on the MFIN definition basis the size of MFI as published in the MFIN Micrometer publication. MFIs with GLP below Rs 100Cr are categorized as “small”, between Rs 100 Cr to 500 Cr as “medium” and > Rs 500 Cr as “large”). One large, two medium and three small MFIs representing eight states and their 19 branches participated in the project.

Following are the participants MFIs and the branch allocation details

Table 3: Participant MFIs with branch allocation

<table>
<thead>
<tr>
<th>MFI (Category)</th>
<th>State</th>
<th>Corresponding District/s</th>
<th>No. of branches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Svatntra (Large)</td>
<td>Bihar</td>
<td>Vaishali</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Maharashtra</td>
<td>Thane</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Uttar Pradesh</td>
<td>Varanasi and Allahabad</td>
<td>2</td>
</tr>
<tr>
<td>Vaya (Medium)</td>
<td>Bihar</td>
<td>Patna and Muzaffarpur</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Karnataka</td>
<td>Bellari and Koppal</td>
<td>2</td>
</tr>
<tr>
<td>Midland (Medium)</td>
<td>Punjab</td>
<td>Ludhiana</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Rajasthan</td>
<td>Jaipur</td>
<td>2</td>
</tr>
<tr>
<td>NEED (Small)</td>
<td>Uttar Pradesh</td>
<td>Sitapur and Unnao</td>
<td>2</td>
</tr>
<tr>
<td>Nightingale (Small)</td>
<td>Assam</td>
<td>Guwahati</td>
<td>2</td>
</tr>
<tr>
<td>Inditrade (Small)</td>
<td>Tamil Nadu</td>
<td>Chennai</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8</strong></td>
<td></td>
<td><strong>19</strong></td>
</tr>
</tbody>
</table>
Two MFIs - NEED and Vaya, withdrew their three branches (Unnao, Bellari and Koppal) from the pilot due to their internal operational reasons. While identifying the branches under the pilot it was agreed that while MFIN will provide support for 100% of the branch coverage but it will be finally decided by the respective MFIs with how many clients and branches they want to roll out the pilot. Hence out of 38,000 clients mapped under the above-mentioned pilot branches, partner MFIs decided to roll out the pilot with 14,245 clients mapped under these branches (transaction level details are in the achievement section of the report).

2.1.2 **Project initiation workshop for initial interaction with the partner MFIs**

MFIN organised a day-long Project Initiation Meeting (PIM) on 9\textsuperscript{th} May 2018 as first step of the Groundwork Phase for this project. The purpose of this meeting was primarily to provide a brief to the participating NBFC-MFIs on project phases & activities, timelines, demonstrate the digital models that would be tested and obtain feedback from their experiences that would be valuable during the execution phase. The PIM was attended by senior representatives from the six participating NBFC-MFIs who have been selected for the Pilot, along with the Spice Digital Team who are the Technical Support Agency (TSA) for this project and MFIN staff.

A report detailing the discussions and decisions taken during the meeting is documented in the project initiation workshop report.

2.1.3 **Visit to partner MFIs to meet their senior management to ensure project buy-in and to conduct process mapping of their repayment activities**

Partner MFIs’ head office and branch visits were done to understand the systems and processes of respective MFIs.

Objectives of the meeting was to:

- Discuss with different stakeholders including top management to explain the reconciliation system and entire operational process
- Understand current systems and processes used in MFIs for EMI collection
- Involve more people in providing direct feedback for solution development
- Prepare MFIs to initiate the project and answers any queries that they might have.

The visit and engagements helped the project team immensely in product design and understand the MIS, reconciliation and existing technology and LMS of MFIs. Another output of the visit was MFI wise process maps to identify the point of intervention, this further helped in product and process designing.

2.1.4 **Selection of project locations to pilot cashless models**
The distribution of solutions was based on base line study conducted by M-Cril at all the pilot branches and accordingly mPOS devices were offered.

The baseline survey highlighted that Aadhaar seeded bank account is available with more than 90% of customers. Therefore, the Bio-Metric machine has been provided to all loan officers. Further, the UPI could be used without any additional equipment, therefore it is also encouraged for all customers for uptake. However, the study shows that only 14% of customers have debit cards, therefore, distribution of mPOS device was restricted to lesser number.

While, it was expected that all loan officers will be able to use Aadhaar Pay and UPI, but the availability of card-based solution, mPOS, could be limited to lesser number of loan officers. Therefore, while Aadhaar Pay solution has been provided to all (78) loan officers, the mPOS solution was provided to 59 loan officers.

2.1.5 Baseline survey

Baseline study was conducted to understand the following:

- the extent to which clients are connected to various cellular or banking infrastructure;
- If they have ever used any of the pilot modes for payment through any channel
- to understand which mode of digital collection is likely to succeed at the selected branches

With the above objectives, the study was conducted with 1,220 clients at their respective center / group meeting locations across 6 MFIs and 8 states by Micro-Credit Ratings International Limited (M-CRIL).

The study has made the following recommendations, based on an analysis of survey data as well as field observations. It is hoped that these recommendations will pave the way for the project to streamline their efforts in incubating pilot models of digital transactions for microfinance lending in India.

1. **Training is of utmost importance for improving uptake of digital mediums.** Most MFI clients have limited education and are living in rural areas. As such their familiarity with different digital mediums is restricted. Many clients have expressed hesitation in adopting digital means of transaction because they are worried of making mistakes. Security of these mediums is also an important concern.

2. **Dedicated team for promotion and awareness regarding digital transactions is required.** Awareness should be given through external partners, given that field officers are already burdened with monthly targets and cash collection schedule. Once clients are equipped with basic knowledge, then field officers can engage in promoting digital means on a regular basis.

3. **There is a need to improve client’s confidence in using digital mediums through collections at center meetings.** Only 26% of the clients can use the debit/credit by themselves while rest of them have to rely on family members or neighbors to withdraw money. MFIs can train clients by promoting collections through PoS at centre meetings and impart financial training. Moreover, digital transactions should be promoted by involving as many clients as possible, rather than a
select few taking responsibility for other members. This will help them to gain confidence and use card independently in future transactions.

4. **Promotion of available services for feature phones can be helpful for MFI clients.** Majority of the clients (65%) only have a feature phone. Owning and using smartphones may require additional training for rural MFI clients. Hence, MFIs should focus on digital mediums that are not dependent on type of phone. *99# through UPI was used for the study but due to complex set up procedure it didn’t worked out as expected.

5. **Digital transaction medium should be sustainable for both MFI and clients.** To inculcate the habit of digital transactions, clients should be given training on usage of USSD (*99#) service where they can send amounts up to Rs.5000 per transaction and is available in 12 different languages. Though USSD service can be used in both feature and smartphone, M-CRIL suggests that this method of transaction will be more suitable for clients having feature phone given 65% of clients have it and of this, 75% are linked with bank account. High transaction cost could be a hindrance and MFIs should come up with a way to decrease the burden on clients.

6. **MFIs should begin by promoting digital mediums that clients in the region are already familiar with.** Aadhaar enabled payments can be promoted in Maharashtra, Rajasthan, Uttar Pradesh and Bihar given regular usage in ration shops and for withdrawing money from bank branches. Card usage is high among clients in Assam and Tamil Nadu.

The baseline survey report prepared by M-Cril has detailed information about the digital behavior of the customer and bank account ownership.

### 2.1.6 Digital Payments Model Selection

Spice in consultation with MFIN developed three models for loan repayment collection for MFIs. The methods thus proposed were substantially different from each other in terms of requirements from customer side. Thereby providing multiple options to customer for digital payment. Methods of transaction proposed for the project are as follows:

1. **BHIM Aadhaar Pay:** Here customer can pay using the Aadhaar number and by providing bio metric information through finger scan
2. **mPOS (Mobile Point of Sale):** Customers with debit card may choose to pay using this method
3. **UPI (Unified Payment Interface):** This is mobile phone-based solution. Customers with UPI id may pay to MFIs using this method through mobile phone. The UPI id could also be created using the smart phone.
Rationale for choosing three models of transactions were as following:

1. **Aadhaar Pay**
   - For the lesser literate segment who have used Aadhaar based transaction or activities at multiple interaction points like PDS, bank account opening, cash withdrawal etc.

2. **mPOS (Debit card Only)**
   - For literate customer segment, who knows how to use debit card, is aware of card based frauds, and can remember her PIN
   - This customer segment would have used her card to withdraw cash or to make purchases

3. **UPI and USSD 2.0**
   - Highly literate and technology savvy customer, who can create her virtual payment address (VPA) for UPI based transactions
   - This segment would have created her BHIM or other e-wallet based UPI ID for transactions

Further, the solutions were refined and improved in consultation with MFIN and partner MFIs to suit the need of MFIs. The partner MFIs stated that the process of collections should be eased for reconciliations and capturing customer information. Hence QR based solution was proposed by MFIN for capturing customer data and to avoid data input errors. Each customer has been provided with a unique QR code that captures their information. With the solution in place, MFIs’ need not record individual information manually against each loan for which data has been provided.

### 2.1.7 Software design and testing

The software (mobile application) for digital modes of loan collection was developed in-house by Spice on BHIM Aadhaar Pay, UPI and mPOS (debit card only) model. Quick response code was used to fetch and populate client information in the mobile application to avoid manual input error. Each customer was provided with QR code that has their loan identification information. With this functionality, the MFI was able to capture the information about the customer and link the repayment with it.

The QR code had the following information:

- a. Customer Name
- b. Loan Account Number
- c. Center Name / Number
- d. Repayment amount
For easy identification of QR codes, customer details were written on the sticker. To ensure privacy, the loan repayment amount was not written on the QR code sticker, however, was part of the information when QR code was scanned by the Spice application.

Each MFI was provided with an additional access to web portal to access all transactions happening in the field in real time. Further, a customer care number and e-mail id were provided to raise any reconciliation and operational issues during the execution of the project.

To ensure that the solution developed by Spice is working as per the requirements of the project, UAT (User Assessment Test) was done by Spice and MFIN team and was then done by partner MFIs’ head office and branch staff. After this UAT and feedback from MFIs the application was modified before rolling out for execution. The testing was done to ensure MFI staff can explore the application in the test environment before going live and it also ensured MFIs’ involvement into the project.

### 2.1.8 Development of training modules and training delivery to clients and staff

Videos and paper-based pamphlets were designed for client awareness exercise. Persona of Kamla and Vimla didi was developed to project two different personalities, while Kamla was a digital payment and financially aware local resident, Vimla didi keeps money in cash at her home and face issue like theft, misuse, spoilage etc. These personalities were reinforced and referred at every stage of the client and staff interaction to inform them that this intervention aims a slow transition from Vimla to Kamla didi and what are the benefits of it.

These pamphlets were printed in six vernaculars and printed form and videos in soft copy were given to MFI head office team after the ToT training of the branch level staff. They further used it to deliver training to their clients during the centre meetings. The customer awareness emphasized on need of banking services and digital payments. Clients and staff were explained about the different channels through which cash can be converted to digital format for digital payment.

To ensure that the pamphlets are easily comprehended by the clients of all the pilot states, it was printed in the following vernacular languages:

- Hindi
- Kannada
- Punjabi
- Marathi
- Tamil
- Assamese

Videos were developed in Hindi and English only. All pamphlet developed are mentioned in Annexure 4. These collaterals were used to deliver training to new staff if there was a staff churn and to train clients.
2.2 Phase 2 – Field execution

This phase included training of MFI staff and channel partners on the proposed models followed by roll-out at MFI branches. This was accompanied with concurrent monitoring, client awareness training and support to the MFI team and channel partners. Following are the activity wise details under this phase;

2.2.1 Training of branch staff and TOT of master trainers

Training of Trainer mode was used to educate the end customer and hence Spice team trained the partner staff and few clients as master trainers. Training modules were used by the Spice trainers at all the 19 participating branches to train them on how to use the device, about customer care and why to go digital. These trainings helped staff to be confident on using the hardware and software and they also understood how to train customers using the training collaterals.

2.2.2 Regional Support

While training resources, in order to enable better understanding of project, the content was translated in vernacular/regional languages. Also, it was important to have regional representative of Spice team to handhold the concerns of branch staff and troubleshoot issues at the place of origination. Spice allocated a field level staff for every branch and shared their contact details with the partner MFI branch staff so that they can directly reach out to them in case of any support required.

2.2.3 Customer awareness training

Initially, it was planned that customer awareness on digital payments through training will be camps at locations which are in proximity to client’s location. The awareness training was supposed to be conducted by trained MFI staff. However, due to availability of time with branch staff due to their day to day operations and inconvenience to borrowers, clients were predominantly trained in the regular collection meetings.

2.2.4 Roll out at each branch

The rollout for acceptance of digital payments infrastructure at partner MFI branch was planned in phased manner. The staff/loan officers of MFIs were equipped with an Android App to read QR codes for client and loan identification and accept loan EMI payments using Aadhaar, Debit card and UPI – virtual payment address as payment address. Following is the list of initial activities which was conducted by partner MFIs and Spice together:

1. **MFI on-boarding:** The MFI was on-boarded as a Master-merchant to Spice Money for which a distributor code was generated, and the loan officers are them mapped to their respective MFI. All the loan officers were mapped under this code so that settlement can happen as per the business rules.
2. **Loan officer on-boarding**: MFI staff responsible for collection of repayment are onboarded as Merchant to Spice Money and acquiring Bank and mapped to respective MFIs as master merchant.

3. **Customer On-boarding**: A unique machine readable QR code was generated after collecting identification details from respective MFIs. These QR codes were pasted on the clients’ loan passbook. While using the app for EMI collection by Staff, the QR code is scanned and the customer details with loan ID and amount is automatically reflected.

4. **Download App**: All loan officers had to download the “SPICE Money MFI collection App”, in the smart phones / tablets to be used for collection the application was available at google play store as well.

5. **Service activation**: All ids created to have mPOS, Aadhaar Pay and UPI was activated by the sponsor bank and Spice so that live transactions can happen.

6. **Live transaction dashboard**: Head office staff were given a transaction dashboard through which they could monitor the live transactions happening on the collection days. Though the dashboard was reflecting real time collections, settlement to MFIs was done on the T+1-day basis along with the detailed settlement statement.

   Staff were provided with the biometric devices (Mantra) in order to use BHIM Aadhaar Pay service. Mobile PoS were also provided to selected staff to collect EMI using Debit card of customers. These devices were delivered to MFI’s head office and to branch offices as requested by the partner MFIs.

### 2.2.5 Refresher training of branch staff

Refresher training was conducted at all 19 pilot branches with the aim to motivate branch staff to conduct cash-less transactions and to re-establish the key activities that were taught in the initial training. The refresher training was also required because few of the branch staff got replaced and it was essential to train them as well for efficient execution.

### 2.2.6 Monitoring by MFIN

MFIN’s project team kept monitoring all the activities of the project including the on-field executions. After the cash-less models were rolled out and collection started through pilot models started, the monitoring of the project was done in following two ways:

1. **Offsite monitoring**
   - Review through periodic transaction reports (MFI, branch, loan officer, client and Digital Payment Instrument wise) including the failed and unknown transactions on a weekly and monthly basis
   - Weekly calls on Friday to keep track of all the project-related metrics including MFI performance and activity update
2. Onsite monitoring

MFIN team independently conducted on-site visit at MFI branches and centres to understand and monitor the project progress. The team noted the concerns and the issues being faced in the project by interacting with branch staffs, clients, project and senior management team of partner MFIs. These concerns were then discussed and highlighted to Spice for immediate actions and resolutions.

2.2.7 Helpline number

Customer care number of Spice Digital **0120 3986786** was shared with all the branch staff to get information, advice or guidance for any query or complaints related to digital payment. Apart from this, Spice team’s local staff mobile number was also shared with the partner MFI’s branch staff to call directly in case of any support required.

In addition to the helpline number, local Spice team member’s number a WhatsApp group of each MFI was created to troubleshoot problems arising at the time of loan collection.

A summary of some key issues faced by MFI staff in offering cashless model was as under:

*Table 8: Key issues shared for troubleshooting*

<table>
<thead>
<tr>
<th>Issue</th>
<th>Sub-issue</th>
<th>Count of Instance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unable to Log-in</td>
<td>Forgot username</td>
<td>22</td>
</tr>
<tr>
<td>Unable to Log-in</td>
<td>Change in Mobile Number</td>
<td>4</td>
</tr>
<tr>
<td>Unable to Log-in</td>
<td>OTP not received for password change</td>
<td>6</td>
</tr>
<tr>
<td>Device not working</td>
<td>Mantra device is not working</td>
<td>12</td>
</tr>
<tr>
<td>Device not working</td>
<td>Connector had an issue</td>
<td>8</td>
</tr>
<tr>
<td>Device not working</td>
<td>mPOS paired with wrong username</td>
<td>2</td>
</tr>
<tr>
<td>Device not working</td>
<td>Wrong mPOS device selected in App</td>
<td>3</td>
</tr>
<tr>
<td>BHIM Aadhaar Pay</td>
<td>Issuer not available</td>
<td>180</td>
</tr>
<tr>
<td>BHIM Aadhaar Pay</td>
<td>Transaction declined</td>
<td>156</td>
</tr>
<tr>
<td>BHIM Aadhaar Pay</td>
<td>Amount deducted twice</td>
<td>3</td>
</tr>
<tr>
<td>mPOS</td>
<td>Invalid Card</td>
<td>18</td>
</tr>
<tr>
<td>mPOS</td>
<td>Issuer not available</td>
<td>11</td>
</tr>
</tbody>
</table>

2.2.8 Felicitating the top five branch performance

In order to encourage the branch staff to increase the digital repayment collection uptake through digital means, MFIN proposed to felicitate **top five branches and staff from 19 pilot branches** (basis percentage of loan repayment collection of that branch through Spice designed mobile application only) selected for...
the pilot, during the regional key learning dissemination workshops planned during the month of February to March 2019.

2.3 Phase 3 – Knowledge management

The phase was about compilation of outcomes and learnings of the project so that it can be shared with multiple stakeholders and help MFIN in the scale up plan of the project. The phase had two parts, one was project evaluation conducted by the third-party evaluators and second, four knowledge dissemination workshops in Kolkata, Mumbai, Delhi and Bengaluru conducted to share the learnings and get feedback on the execution.

2.3.1 Pilot evaluation

To evaluate the pilot project on the five broad evaluation parameters (relevance, effectiveness, efficiency, impact and sustainability) an IFMR Lead was contracted by MFIN. The agency interacted with all the stakeholders of the project including clients through focus group discussion and interviews, HSBC, MFIN, Spice, partner MFI’s project and senior management teams to get a holistic view of the project.

2.3.2 Regional workshops for knowledge dissemination

The goal of regional workshops was to disseminate the lessons learned with all the stakeholders related to digital payments ecosystem. These workshops were attended by regulators, partner and non-partner MFIs, fintech companies, banks and NBFCs.

Four regional workshops were conducted on 26th February 2018 at Kolkata, 12th, 15th and 19th March 2019 at Mumbai, Delhi and Bengaluru respectively. Each workshop commenced with a presentation by MFIN on the project background explaining its genesis, the project design and implementation approach. This was followed by a presentation by Spice Digital on achievements of the project along with the transaction data of three cashless models tested under the pilot.

The presentation was followed by a one-hour panel discussion on the topic “Current Issues and Future Technology-Based Solutions for Microfinance”. The panel consisted of experts from Microfinance, banks and fintech companies discussed on the issues highlighted in the presentation and the possible solution for microfinance lending. Many innovative solutions including the use case of blockchain and artificial intelligence were discussed.

Final session of the workshop was a moderated plenary discussion with the audience to get their views on questions raised by the moderator and share their ideas on the next phase of the project. The ideas were documented and will be included in the scale up plan of project.

Details of the workshop have been mentioned in the project end workshop report.
3 Project experience

3.1 Analysis of achievement

The project achieved various tangible and non-tangible output and outcomes which not only helped NBFC-MFIs in efficient loan repayment but also helped clients and loan officers to be aware of new modes of repayment. While tangible outputs have been detailed in terms of the numbers in the later part of the report, few nontangible outcomes as field level anecdotes were:

- Women clients learned how to operate debit card machines and enter PIN to make payments
- Aadhaar based payments gave confidence that the payment through this mode is safer because it’s tough to steal the biometric form factor
- Many loan officers learned about UPI, Aadhaar based and Debit card-based payments. Few loan officers at different point of the project shared that they have learned to use UPI and now use it more frequently to make payments when possible
- These loan officers and clients in turn trained their friends and relatives to use UPI and debit card-based payments
- To make digital payments women clients went to banks and BC points to deposit money as that is the prerequisite to do digital bank led payments. However, measuring its impact on saving behavior was beyond the scope of the project
Data Analysis

A. Branches under the pilot

With the mutual agreement with partner MFIs, MFIN suggested to roll out the pilot at 19 branches, however due to internal reasons two branches of Vaya and one branch of Need opted out of the pilot. Following graph highlights the partner wise number of branches which finally participated in the pilot.

B. MFI Loan officers for the pilot

Of the 19 pilot branches, a total of 78 loan officers were equipped with digital payments acceptance infrastructure like the collection app, biometric machine and mobile PoS, however due to staff replacement and three branch withdrawals, finally 63 loan officers participated in the pilot. The following graph is about MFI-wise planned versus participated number of loan officers.
C. **Number of MFI Collection centers for the pilot**

Out of the 4,037 active collection centers mapped under 19 MFI branches selected for the pilot, 1,256 centers participated in the pilot project, this roll-out was at the sole discretion of the participating MFIs. Following graph shows the MFI wise planned vs participated number of centres.

![Graph showing MFI wise planned vs participated number of centers]

D. **Number of MFI clients under the pilot**

A total of 38,435 MFI clients were mapped under the 19 branches selected under the project and a unique QR code was printed and distributed to them. MFIs later decided to roll out the pilot with 14,245 clients only as per their own discretion. Out of these 14,245 selected clients, 11,955 borrowers attempted paying their loan installment using any one or more of the three digital modes of payment.

- **38,435** borrowers’ identification QR were printed
- **14,245** borrowers of collection center were encouraged for digital payments
- **11,955** borrowers attempted digital modes for loan EMI payments
Following graph is about the MFI wise planned vs participated number of clients.

E. MFI wise transactions

A high proportion of borrowers of Svantra 75% (2,540 out of 3,400) and Midland 95% (7,882 out of 8,282) attempted to pay loan instalment using digital mode.

Punjab, Bihar and U.P. had the maximum contribution in the state wise number of transactions. Following is the graph on state wise number of transactions for the universe on which pilot was rolled out, attempted who tried to make a digital payment and number of transactions which got successful.
State wise data was further clubbed in the region and North contributed highest followed by the East region. Following graph is about the region wise number of transactions.

Medium sized MFI had the maximum contribution in the number of transactions followed by large MFIs*. [* MFI Size: Gross Loan Portfolio (GLP) of <Rs 100 Cr is small, Rs 100 to 500 Cr is medium and >Rs500 Cr is large]
3.2 Cashless models – a snippet of successful transactions

Following is the summary of the successful transactions done through the three cashless modes used under the pilot. All the collections were done following the assisted mode of transaction where loan officer had to initiate the payment transaction and clients had to verify the information and authenticate the transactions. In case of Aadhaar pay customer had to authenticate using her biometrics, in mPOS authentication was done by giving her card and entering her PIN on the device, for UPI it was authorization using feature/smart phone on UPI based application.

![Bar chart showing successful transactions](chart_image)

<table>
<thead>
<tr>
<th>Mode</th>
<th>Successful</th>
<th>Attempt</th>
<th>Universe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>3,400</td>
<td>2,540</td>
<td>1,645</td>
</tr>
<tr>
<td>Medium</td>
<td>9,478</td>
<td>8,640</td>
<td>6,896</td>
</tr>
<tr>
<td>Small</td>
<td>1,367</td>
<td>775</td>
<td>701</td>
</tr>
</tbody>
</table>

### Cumulative Totals

- **Borrower**: 9,041
- **Txn Vol**: 12,806
- **Txn Value**: ₹1,01,72,063

### Transaction Details

- **BHIM Aadhaar Pay**
  - **Borrower**: 3
  - **Txn Vol**: 6
  - **Txn Value**: ₹2,738

- **mPOS – debit card**
  - **Borrower**: 3,562
  - **Txn Vol**: 7,187
  - **Txn Value**: ₹45,26,953

- **BHIM UPI – pull**
  - **Borrower**: 5,476
  - **Txn Vol**: 5,613
  - **Txn Value**: ₹56,41,282
Cashless model wise summary is as following

### 3.2.1 Cash-less model 1 – BHIM Aadhaar Pay

Accept digital payments directly from Customer’s **Aadhaar linked bank account** using **Biometric authentication**. Since all the transactions were assisted hence the clients had to provide her Aadhaar number, bank name and finger impression on the device to complete the transaction. Summary of its performance is as following:

<table>
<thead>
<tr>
<th>Borrower</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Attempt</td>
<td>Successful</td>
<td>%</td>
</tr>
<tr>
<td>Count</td>
<td>8,165</td>
<td>5,476</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transaction Vol</th>
<th>Transaction Value</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Attempt</td>
<td>Successful</td>
<td>Attempt</td>
</tr>
<tr>
<td>Count</td>
<td>%</td>
<td>Value</td>
</tr>
<tr>
<td>25,709</td>
<td>5,613</td>
<td>22%</td>
</tr>
</tbody>
</table>

In four months of project execution, 8,165 borrowers carried 5,613 number of transactions with 22% success to repay their loan through Aadhaar pay. 5,476 borrowers did at least one successful transaction and the cumulative value of transaction was ₹ **56.41 lakhs**.

The main reasons for the transaction decline in the order of its prevalence were as following:

- Biometric Data did not match – Client’s biometric details doesn’t match with the CIDR (central Identity repository) database
- Aadhaar Number is not linked to the bank account – Client’s Aadhaar number is not linked to the bank account which she has offered to pay from
- Insufficient funds – Client does not have sufficient fund to pay the amount
- Transaction Not Permitted to Account holder – Can be related to issuer bank business rule
- Issuer Un-Available – Issuer bank server is not working or was down at that moment
- Issuer or Switch Inoperative (Timeout) – Issuer bank or any other system participant had time out during the transaction.

### 3.2.2 Cash-less model 2 – mPOS debit card

Accept digital payment directly from **customer’s Debit card** using a **mPOS** (EMV device which connects to Mobile using Bluetooth). This was an assisted mode of transaction, so customer had to give her debit card
to the loan officer, which inserts/swipes it on the mPOS device, after which client enters her PIN on the device to complete the transaction. A summary of successful transactions through mPOS is as following:

<table>
<thead>
<tr>
<th>Borrower</th>
<th>Attempt Count</th>
<th>Successful Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3,839</td>
<td>3,562</td>
<td>93%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transaction Vol</th>
<th>Transaction Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attempt Count</td>
<td>Successful %</td>
</tr>
<tr>
<td>8,373</td>
<td>7,187 85%</td>
</tr>
</tbody>
</table>

In four months of project execution, **3,839 borrowers carried 7,187 transactions worth ₹ 45.26** to pay their loan installment. 3,562 borrowers did at least one successful transaction and the overall success rate of mPOS – debit card was 82%.

The main reasons for transactions declines in the order of its prevalence were as following:

- Insufficient funds – Customer doesn’t have sufficient funds in her bank account to pay the requested amount
- Incorrect Pin – Debit card PIN entered by the client is not correct
- Transaction declined by Card Issuer – Business rule based or transaction level decline
- Invalid Transaction – Back end system-based error, can be any reason depending on at which participant level this transaction got denied
- Card issuer is not available – Issuer switch is not available.

### 3.2.3 Cash-less model 3 – BHIM UPI

Accept digital payments directly from Customer’s Bank account using collect request sent to registered Virtual Payment Address (VPA) created under the UPI. Customer can confirm the transaction using BHIM App or *99# on the USSD platform. This is an asset lite model, however customer required to have a debit card and a mobile number registered with bank to set their VPA to make a payment.
UPI despite being one of the better models had negligible take up as it required more concerted assistance to clients as well as MFI staff. Customers don’t have phones with sufficient RAM because of which UPI registration takes more time than required. UPI Pin set up requires debit card, and its availability is limited due to more number of co-operative bank accounts in rural setup.

3.2.4 Post execution phase data (Feb-March 2019)

The pilot execution phase of the project was from October 2018 to January 2019, however four out of six participating MFIs decided to continue with the model even after the execution phase. Following graph is about four MFIs which chose to continue with the model developed under the pilot and their transaction overview.

```
<table>
<thead>
<tr>
<th>Borrower</th>
<th>Attempt Count</th>
<th>Successful Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transaction Vol</th>
<th>Transaction Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attempt Count</td>
<td>Successful %</td>
</tr>
<tr>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>55%</td>
</tr>
</tbody>
</table>
```

* The graph does not include two transactions done by Inditrade on 1st of February 2019.
3.3 Cash-less model – Client Speak

The cashless model was not only appreciated by partner MFIs and other stakeholders but also by their clients. They found it convenient to pay using digital mode as it leaves a transaction trail on their statement/passbook for cross verification and auditing. This also tried to address one issue of the microfinance industry which is misappropriation of fund by staff.

Initially there was a trust deficit among the clients regarding the digital mode of repayment however by end of the project those clients preferred to repay using digital model even after facing multiple transaction declines.

3.4 Cash-less model – Staff Speak

The pilot helped partner MFI staff to learn new methods of digital payments which they use for the microfinance clients’ repayment and for their day to day payments as well.

Saroj Kumar a field officer of Svatantra Microfin has said that he likes the digital repayment process and would like that more number of clients should repay using this model. This helps to reduce the risk of carrying cash which at times prove fatal for many loan officers, at times risking their lives. With mobile payment companies changing the expectations and convenience I think digital payment is the way forward and many people including children are using it for bill payments.
4 Recommendations

The pilot has provided many good observations as well as challenges, on the basis of which the following recommendations are suggested for the scale up plan and for other companies desirous to explore the digital repayment route for their clients.

i. **Aadhaar and Debit card emerged as the popular form factor for digital payments by MFI borrowers & can be scaled-up.** 8,165 borrowers attempted to pay installment using Aadhaar, of which 5,476 borrowers did a successful transaction. 3,839 borrowers attempted to pay installment using Debit card of which 3,562 borrowers did a successful transaction.

ii. **Client awareness activities work best when integrated with MFI’s regular operations:** Integrating the awareness program in MFI regular operations not only saves time & cost but also brings in an element of repeat lessons which is not possible in a one-off activity like awareness camp. However, if the combination of two can be done it works best.

iii. **Customer training will be vital for the next phase:** As many customers raised the issue of trust and were afraid of extra money being deducted by the staff, the project needs more time and engage a specialized agency for delivering training in the next phase.

iv. **Non-financial transactions (like bank balance inquiry) are a precursor for building trust in digital payment instruments.** Since the digital products used in the pilot were merchant payments (and not P2P transactions), balance enquiry was not provided in Aadhaar Pay, mPOS and UPI as per the procedural guidelines of NPCI and acquiring banks. Lack of this feature had a larger impact on success rate of Aadhaar Pay.

v. **Lack of Debit card limited the uptake of the project:** Due to the limited availability of debit cards, UPI transactions didn’t pick up quite well and UPI based registration could not happen. A greater focus is needed on making customer aware about the benefits of having a debit card.

vi. **Rural Regional Banks (RRBs) are popular Banks for LMI segment, however the success rate is quite low in digital payments.** A lot of declines in BHIM Aadhaar Pay and Rupay Debit card swipe were observed on customers banking with RRB. Though the RRBs have made significant improvement in interoperability using technology and have started issuing debit card. This will help in next phase.

vii. **Scale-up with deep integration with MFI system:** In the current process of loan EMI collection using digital payments mode, the details of the loan were entered using a QR scan and subsequent entry of form factor (Aadhaar Number, VPA). The data entry has led to an increase in collection meeting timing by approx. 20 minutes. To minimize the TAT, a deep integration of MFI CRM app with Payments app is suggested for the next phase. This will drive maximum adoption.
viii. **Use of Integrated device for better efficiency:** Wired devices are not the best of mobility solution. With advancement in hardware integrated device (mobile, biosensor, mPOS, thermal printed) will make the system more efficient. The project must explore partners providing integrated system.

The project had delivered on the defined objectives and provided a way forward to the project scale up.

## 5 List of Annexures

<table>
<thead>
<tr>
<th>#</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annexure 1.</td>
<td>Collaterals developed, pamphlets in English (it was translated in six vernaculars)</td>
</tr>
<tr>
<td>Annexure 2.</td>
<td>Pictures from the implementation phase, training and dissemination of knowledge</td>
</tr>
</tbody>
</table>
Annexure -2 (Pamphlet)

WORRIED VIMLA DIDI
Keeps cash at home

- Worry of counting remembering money
- Fear of wastage
- Fear of misuse
- Fear of theft

HSBC

WISE KAMLA DIDI
USES BANK

- Use digital finance
- Avail govt. benefits
- Is role model for community

- Use banking facility
- Keeps money safe
- Earn interest

HSBC

BANK

KAMLA DIDI IS DIGITAL FINANCE LITERATE
SHE USES DIGITAL FINANCE

Aadhaar Pay
Aadhaar Pay using Aadhaar number associated with bank account
Fingerprint scan

UPI
Pay using UPI ID
Transaction PIN

mPOS
Pay using debit card
PIN (ATM)

HSBC

Spice money
We Thank our Partners for their efforts and support